

THE INSECT PEST SURVEY
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INSECT NOTES FROM COSTA RICA IN 1934

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The following tables were prepared from notes sent in each month during 1934 by C. H. Ballou. The dates indicate the time specimens were collected and are not necessarily the period of activity of the insect, nor do the given localities limit the distribution of the species. The notes are arranged by orders and under the families in the larger orders. In order to condense the tables, certain localities are abbreviated as follows:

Muelle = Muelle de San Carlos

Paso Ancho = Paso Ancho de San Sebastian

Peralta = Peralta y Chitaria

San Antonio = San Antonio de Belen

San Isidro = San Isidro de Coronado

San Pedro = San Pedro de Montes de Oca

Santa Barbara = Santa Barbara de Heredia

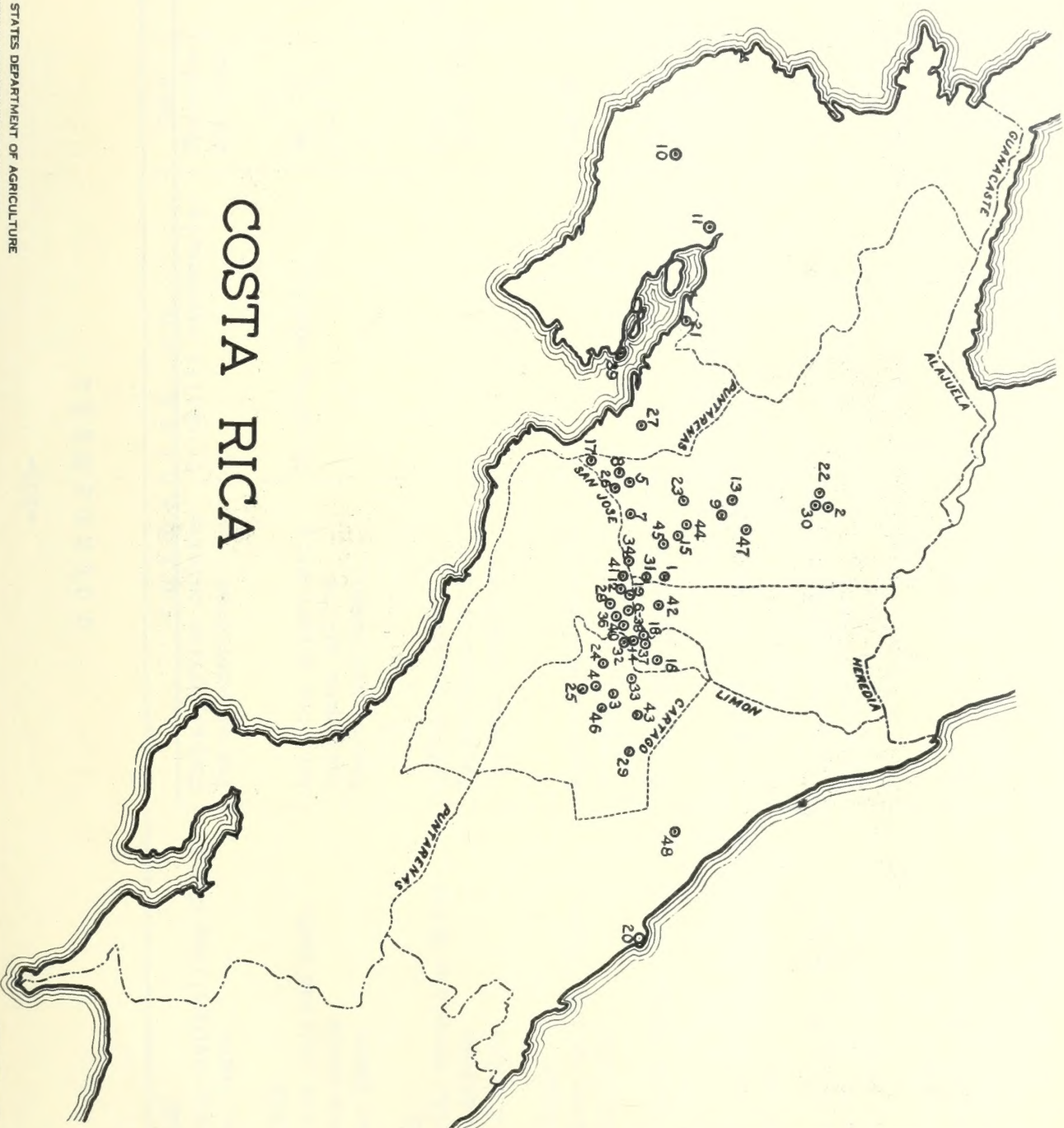
The accompanying map was prepared for this publication by Rafael A. Chavarria, Director of the Centro Nacional de Agricultura.

Explanation of Map

The letters in the following list give some idea of the climate when considered with the region in which the place lies. The eastern slope (E) is a humid region; the western slope (W) is dry; the central plateau (C) is moderate; San Carlos (S) is very wet. The number following the name represents altitude in feet. The number preceding the name is given to locate the place on the map.

- | | |
|----------------------------------|--|
| 1 Alajuela (C) 4490 | 25 Orosi |
| 2 Boca de Kopper (S) 600 | 26 Orotina (W) 853 |
| 3 Canada de Cot (C) 7250 | 27 Pan de Azucar (W) 70 |
| 4 Cartago (E) 5653 | 28 Paso Ancho de San Sebastian (C) |
| 5 Cascajal (W) 448 | Lower than San Jose |
| 6 Charui (=San Jose) | 29 Peralta (E) 1055 and Chitaria several |
| 7 Concepcion (W) 1040 | hundred feet higher |
| 8 Coyolar (W) 700 | 30 Quebrada Azul (S) About 800 |
| 9 Cuesta del Macho (S) highest | 31 Rio Segundo (C) 3940 |
| part of San Carlos | 32 Sabanilla (C) |
| 10 El Cacao (C) | 33 Sanatorio Duran (C) 9090 |
| 11 El Pizote (C) 6300 | 34 San Antonio de Belen (C) 3119 |
| 12 Escasu (C) 4500 | 35 San Dimas (C) |
| 13 Florencia (S) | 36 San Francisco de Dos Rios (C) |
| 14 Granadilla (C) | 37 San Isidro de Coronado (C) 5580 |
| 15 Grecia (C) 4330 | 38 San Jose (C) 4645 |
| 16 Guadalupe (C) | 39 San Lucas (W) 25 |
| 17 Lagunillas (W) | 40 San Pedro de Montes de Oca (C) 5300 |
| 18 La Holanda (C) 7480 | 41 Santa Ana (C) 3900 |
| 19 La Uruca (C) 4550 | 42 Santa Barbara de Heredia (C) 5060 |
| 20 Limon (E) 10 | 43 Santiago de Paraiso (E) 3536 |
| 21 Manzanillo | 44 Sarchi (C) 5400 |
| 22 Muelle de San Carlos (S) 630 | 45 Tacares (C) 3200 |
| 23 Naranjo (C) 4673 | 46 Ujarras |
| 24 Ochomogo (On the Divide) 6059 | 47 Villa Quesada (S) |
| | 48 Waldeck (E) 60 |

COSTA RICA



COLEOPTERA

	C o l l e c t e d o n		Date Through- out year	Notes
	Chrysophyllum cainito	Trichilia havanensis		
ANTHICIDAE				
Anthicus asphaltinus Champ. San Pedro	Persea americana			
CANTHARIDAE				
Diaphron proteum Gorb. Paso Ancho San Pedro	Acnistus arborescens Pastinaca sativa Persea americana	Spondias mombin	May 21 June 11	
CAPABIDAE				
Calleida chryseis Bates Guadalupe San Pedro	Coffea arabica Persea drynifolia Vernonia brachiata		Jan. 5 Sept. 30	Always taken be- tween leaves webbed together.
CERAMEYCIDAE				
Antodice cretata Bates San Pedro	Tournefortia foetid- issima		May 26	Eats midribs of leaves.
Esthlogona porosa Bates El Cacao	Eriobotrya japonica		Nov. 12	
Oreodera costaricensis Thom. Escasu	Erythrina rubrinervia		Jan. 17	Called "Zapatero."
Phaea lateralis Bates Guadalupe San Pedro	Erythrina rubrinervia Ipomoea tiliacea		May 26	
CHRYSOEIDAE				
Calligrapha elegantula Jacoby Ochomogo San Pedro	Panicum barbinode Saccharum officinarum	Sida rhombifolia Zea mays	June 28 Aug. 28 Oct. 8	

C o l l e c t e d o n			Date	Notes
Cerotoma rogersi Jacoby	Cestrum sp.	Meibomia frutescens	Sept. 13	A serious pest of
Orosi	Cucurbita pepo	Phaseolus vulgaris	to	string beans.
Paso Ancho	Galinzoga hispida	Vicia faba	Dec. 28	
	Guarea caoba	Vigna sesquipedalis		
Chalcophana mutabilis Harold	Vernonia brachiata		May 31	
Paso Ancho				
Chelymophra gressoria Boh.	Asparagus officinalis		June 28	
Ochomogo				
Colaspis prasina Jacoby	Croton gossypifolium	Solanum melongena	Jan. 24	Lives on wild
Guadalupe	Musa paradisiaca	Solanum torvum	to	Solanum and mi-
San Pedro	Pastinaca sativa	Solanum tuberosum	June 22	grates to cul-
	Solanum lanceolatum		Nov. 22	tivated species,
	var. sinuatum		Dec. 20	especially egg-
				plant.
Cryptocephalus trizonatus	Amygdalus persica	Pisum sativum	Through-	
Suffr.	Capsicum annuum	Prunus pissardi	out year	
Coyolar	Diospyros virginiana	Sida rhombifolia		
Paso Ancho	Diphysa robinoides	Vernonia brachiata		
San Isidro	Elephrium simaruba			
San Pedro			Jan. 5	
Cryptocephalus tesseratus	Malus sylvestris			
Chovr.				
San Pedro				
Deloyala testudinaria Boh.	Acnistus arborescens		May 26	
El Cacao	Solanum nigrum		Sept. 13	
Orosi			Nov. 6	
San Pedro				

C o l l e c t e d o n			Date	Notes
Diabrotica balteata Lec. Coyolar Guadalupe Muelle Ochomogo Pan de Azucar San Pedro Santa Ana Villa Quesada	Ananthurus spinosus Capsicum annuum Celosia cristata Citrus sp. (toronjo) Crescentia cujete Crotalaria striata Cucurbita ficifolia Heliotropium indicum Iberis sp. Lactuca sativa	Lycopersicum esculentum Malus sylvestris Pelargonium zonale Persea americana Phaseolus vulgaris Pisum sativum Sida rhombifolia Solanum tuberosum Zea mays	Feb. 19 to Dec. 20	When very abundant, causes consider- able damage, es- pecially on beans and potatoes.
Diabrotica corrusca Jacoby Ochomogo San Pedro	Chayota edulis Cucurbita pepo Phaseolus vulgaris	Solanum tuberosum	June 28 Sept. 8	
Diabrotica dorsoplagiata Jacoby San Pedro	Citrus sinensis		June 1	In flowers.
Diabrotica fulvicornis Jacoby San Dimas San Pedro	Citrus grandis Citrus limonia Citrus nobilis de- liciosa Citrus sinensis Erythrina rubrinervia	Eugenia jambos Persea americana Saccharum officinarum Vernonia brachiata Vicia faba	Mar. 16 to Dec. 20	
Diabrotica nummularis Harold Cuesta del Macho Guadalupe Muelle Ochomogo Paso Ancho San Isidro Villa Quesada	Acacia melanoxylon Acnistus arborescens Ageratum conyzoides Amaranthus cruentus Amygdalus persica Anethum graveolens Annona cherimola Asclepias curassavica	Asparagus officinalis Bidens pilosa Bixa orellana Calocarpum mammosum Calyptanthus costari- censis Cestrum macrophyllum Chayota odulis	Through- out year	Very abundant and very destructive to potatoes throughout June at San Pedro. A general feeder, often destroying vegetable and flower gardens.

Diabrotica nummularis--Cont'd.	C o l l e c t e d o n	Date	Notes
Chrysanthemum maximum	Lonicocarpus sp.		
Citrus limonia	Medus sylvestris		
Citrus sinensis	Paraissonia aculeata		
Colocasia sp.	Persea americana		
Crotalaria striata	Phaseolus vulgaris		
Cucurbita ficifolia	Peytolacca decandra		
Cucurbita pepo	Polygonum acre		
Dianthus caryophyllus	Prunus armeniaca		
Diospyros kaki	Psidium guajava		
Erythrina rubrinervia	Raphanus sativus		
Eschscholtzia californica	Rosa spp.		
Eugenia uniflora	Rumex crispus		
Ficus carica	Saccharum officinarum		
Hedychium coronarium	Solanum nigrum		
Hibiscus rosa-sinensis	Solanum tuberosum		
Iberis sp.	Spondias mombin		
Impatiens balsamina	Terminalia catappa		
Ipomoea batatas	Vicia faba		
Ipomoea tiliaacea	Vitis vinifera		
Lagerstroemia speciosa	Zea mays		
Annona cherimola	Zinnia elegans		
Chayota edulis	Cucurbita pepo	Jan. 18	General feeder.
Citrus limonia	Iberis sp.	to	Destroyed candy-
Coffea arabica	Solanum tuberosum	Sept. 11	tuft in July
Conostegia lanceolata	Tripsacum laxum		at Guadalupe.
Cornutia cymosa	Vitis vinifera		
Cucurbita pepo	Zea mays		
Eschscholtzia californica	Saccharum officinarum	March 28	Abundant on corn
Iberis sp.	Sobralia decora	to	in August, es-
Inga paterno	Tripsacum laxum	Dec. 20	pecially on
Pennisetum purpureum	Verbena litoralis		the silk.
Phaseolus vulgaris	Zantedeschia aethiopica		
	Zea mays		

C o l l e c t e d o n		Date	Notes
Diabrotica vittata Fab.	Citrus sinensis	Feb. 15	Very abundant on
Ochomogo	Cucurbita ficifolia	June 28	various cucur-
Peralta	Cucurbita pepo	Aug. 22-	bitaceous plants
San Dimas	Raphanus sativus	Dec. 20	
San Pedro			
Epitrix fuscata Jac.-Duv.	Capsicum annuum	Feb. 4	A serious pest of
Paso Ancho	Lycopersicum esculen-	to	potato and to-
	tum	Dec. 30	mato.
Galeruca encaustica Germ.	Casuarina equiseti-	Apr. 20	
Granadilla	folia	to	
Paso Ancho	Citrus nobilis de-	June 28	
San Pedro	liciosa	Oct. 25	
	Coffea arabica	to	
		Nov. 26	
Homophoeta cyanipennis octo-	Acnistus arborescens	Feb. 5	Sometimes harmful
maculata Grotch	Allium cepa	to	on tender growth
Coyolar	Amayllis sp.	Dec. 27	especially of
Cuesta del Macho	Amygdalus persica		avocado.
El Cacao	Anacardium rhinocarpus		
Granadilla	Asparagus officinalis		
Guadalupe	Canna indica		
Orosi	Citrus grandis		
Paso Ancho	Citrus medica		
San Pedro	Citrus sinensis		
Santa Ana	Coffea arabica		
Villa Quesada	Coix lachryma-jobi		
	Croton gossypifolius		
	Dahlia rosea		
	Dioscorea sp.		
	Gardenia japonica		

C o l l e c t e d o n			Date	Notes
Leptinotarsa undecimlineata Stahl	Phytolacca decandra Saccharum officinarum Solanum aculeatissimum Solanum torvum			Very common on Solanum spp.
Mettrionia emarginata Pohl. San Pedro	Hamelia erecta Ipomoea batatas		May 26 Oct. 5	
Modonota irazuensis Jacoby El Cacao Grecia Guadalupe Ochomogo Paso Ancho San Pedro Santa Ana Villa Quesada	Acalypha wilkesiana Ageratum conyzoides Amaranthus cruentus Amygdalus persica Annona cherimola Annona reticulata Asclepias curassavica Bidens pilosa Bixa orellana Echmeria nivea Calliandra grandiflora Callistemon lanceolatus Calyptranthes costaricensis Camellia japonica Carissa grandiflora Cestrum aurantiacum Cestrum laxatum Chayota edulis Chenopodium ambrosioides	Chrysanthemum Cichorium intybus Citrus aurantiifolia Citrus limonia Citrus sinensis Coffea arabica Coleus blumei Conostegia lanceolata Corcopsis lanceolata Crotalaria striata Croton gossypifolium Cucurbita pepo Capressus benthami Cydonia oblonga Dahlia rosea Dianthus caryophyllus Diospyros kaki Diphysa robinoides Eriobotrya japonica Erythrina rubrinervia Eschscholtzia californica Eugenia uniflora	Jan. 5 to Dec. 31	Probably the most harmful insect observed during the year. It feeds especially on tender new leaves.

Nodonota irazuensis--Cont'd	C o l l e c t e d o n	Date	Notes
Ficus carica	Ficus carica	Prunus avium	
Fragaria chiloensis	Fragaria chiloensis	Prunus pissardi	
Gliricidia maculata	Gliricidia maculata	Psidium guajava	
Hibiscus rosa-sinensis	Hibiscus rosa-sinensis	Pyrus communis	
Impatiens balsamina	Impatiens balsamina	Raphanus sativus	
Inga paterno	Inga paterno	Rosa spp.	
Ipomoea batatas	Ipomoea batatas	Rumex crispus	
Ipomoea tiliacea	Ipomoea tiliacea	Saccharum officinarum	
Lippia berlandieri	Lippia berlandieri	Salvia sp. (Chian de	
Malacra radiata	Malacra radiata	Guatemala)	
Malus sylvestris	Malus sylvestris	Schinus molle	
Mangifera indica	Mangifera indica	Solanum tuberosum	
Morus rubra	Morus rubra	Sterculia diversifolia	
Myrsotis sylvatica	Myrsotis sylvatica	Tagetes erecta	
Panicum barbinode	Panicum barbinode	Terminalia catappa	
Pastinaca sativa	Pastinaca sativa	Thuja plicata	
Pelargonium graveolens	Pelargonium graveolens	Tripsacum laxum	
Pelargonium zonale	Pelargonium zonale	Tropaeolum majus	
Persea americana	Persea americana	Verbena	
Persea drymifolia	Persea drymifolia	Vernonia brachiata	
Phaseolus vulgaris	Phaseolus vulgaris	Vicia faba	
Poinsettia pulcherrima	Poinsettia pulcherrima	Vigna sesquipedalis	
Polygonum acre	Polygonum acre	Vitis vinifera	
Prunus armeniaca	Prunus armeniaca	Zea mays	
Nodonota interalis Jacoby	Ageratum conyzoides	Citrus sinensis	Especially
Coyolar	Amygdalus persica	Coffea arabica	Throat out year.
El Cacao	Casuarina equisetifolia	Conostegia lanceolata	harmful to roses.
Grecia	Chenopodium ambrosioides	Couralea rosea	
Guadalupe	Chrysanthemum maximum	Crotalaria striata	
San Isidro	Citrus limonia	Cupressus benthami	
San Pedro		Piospyros virginiana	
		Dianthus caryophyllus	

Monodonota lateralis--Cont'd.	Collected on	Date	Notes
<i>Oediorhynchus tenuicincta</i> Jacoby San Pedro	<i>Eugenia uniflora</i> <i>Galinsoga hispidula</i> <i>Hicoria pecan</i> <i>Inga paterno</i> <i>Malus sylvestris</i> <i>Mangifera indica</i> <i>Myosotis sylvatica</i> <i>Panicum barbinode</i> <i>Pelargonium graveo- lens</i>	June 18	Usually taken at lights.
<i>Pachybrachys femoratus</i> Oliv. El Cacao San Pedro	<i>Amgdalus persica</i> <i>Eugenia uniflora</i> <i>Persca americana</i> <i>Prunus cerasifera</i>	Feb. 5 to Dec. 20	
<i>Prionodera wagneri</i> Harold Ochomogo COCINELLIDAE	<i>Zea mays</i>	June 28	
<i>Epilachna borealis</i> Fab. Coyolar El Cacao San Dimas San Lucas San Pedro Santa Ana	<i>Cestrum</i> sp. <i>Cucurbita pepo</i> <i>Jatropha urens</i> <i>Luffa cylindrica</i> <i>Myosotis sylvatica</i> <i>Phaseolus vulgaris</i>	June 18 to Dec. 9	
<i>Epilachna corrupta</i> Muls. Grecia	<i>Phaseolus vulgaris</i>	Dec. 7	
<i>Epilachna defecta</i> Muls. Candelario Orosi Paso Ancho	<i>Acnistus arborescens</i> <i>Cestrum laetum</i> <i>Cestrum macrophyllum</i> <i>Coffea arabica</i>	March 2 to Dec. 22	A pest of Zorrillo (<i>Cestrum</i> spp.) throughout the year.

Epilachna defecta--Cont'd.	Collected or	Date	Notes
San Pedro	Croton gossypifolium		
Santa Ana	Vernonia brachiata		
Epilachna vincta Crotch	Podachonium alatum	Jan. 26	
San Isidro			
Epilachna virgata Muls.	Citharexylum caudatum	Fe. 4	Seriously damages
Paso Ancho		May 28	Dama.
San Pedro		Dec. 25	
ELATERIDAE			
Agriotes sublineatus Champ.	Citrus sinensis	May 26	
San Pedro	Erythrina rubrinervia	to June 5	
EROTYLIDAE			
Cyphorotylus elevatus Feb.	Coffea arabica	Apr. 5	
San Pedro		Sept. 10	
Mycotretus luteipes Lac.	Pleurotus sp.	May 29	
San Pedro		Nov. 22	
LYCIDAE			
Calopteron bifasciatum Gorh.	Casuarina equiseti- folia	Apr. 20	
San Pedro			
MALACHIDAE			
Anthocomus basillis Erichs.	Dovyalis hebecarpa	May 9	
San Pedro			
NITIDULIDAE			
Colopterus morio Erichs.	Zantedeschia aethio- pica	Apr. 5	In flower.
San Pedro			

S C A R A B A E I D A E			C o l l e c t e d o n		Date	Notes
Anomala testaceipennis Blanch. San Pedro	Rosa sp.				Oct. 22	
Euphoria candezei Janson Guadalupe	Couralea rosea				July 2	
Faula brunneipennis Bates Oconomojo San Jose San Pedro	Arethum graveolens Asparagus officinalis Capsicum annuum Casuarina equiseti- folia Chayota edulis Coffea arabica hickoria pecan	Malus sylvestris Pelargonium zonale Persea americana Persea drymifolia Pyrus communis Rosa sp. Vitis vinifera			May 14 to July 2	Destroyed a grape crop and damaged avocado at San Pedro early in June
Gymnetis liturata Oliv. Guadalupe San Pedro	Coffea arabica Ficus carica Persea americana Vernonia brachiata				Jan. 29 to Feb. 16 Nov. 20 to Dec. 17	Sucking sap at wound in bark of avocado. Eating fruit of fig.
Hoplia argyrites Bates San Pedro	Citrus sinensis Persea drymifolia Prunus pissardi				May 15 June 5	Eating flowers of avocado.
Hoplia surata Bates San Pedro	Malus sylvestris Spondias mombin				May 22, 26	
Macrodactylus lineatus Chev. San Pedro	Persea americana				May 15 -30	Eating considerable damage.

C o l l e c t e d o n			Date	Notes
Macroductylus suavis Bates Paso Ancho San Pedro	Calcea urticifolia Citrus limonia Citrus sinensis	Cydonia oblonga Persea drymifolia Spondias mombin	May 28 to July 2	Damages avocado, especially flowers.
Macroductylus sylphus Bates Paso Ancho San Pedro	Acanthus arborescens Citrus aurantifolia Malus sylvestris Persea americana	Persea drymifolia	May 15 to June 18	Frequents flowers of Citrus spp. and destructive to avocado.
Pachystethus nicans Burn. San Pedro	Conostegia lanceolata		May 26	In flowers.
Pachystethus nitidula Blanch. San Pedro	Rosa sp.		Oct. 22	
Strigoderma rutelina Bates El Cacao	Phaseolus vulgaris		Nov. 27	
STAPHYLINIDAE				
Poderus luctus Erich. San Pedro	Fragaria chiloensis		Oct. 5	
Philonthus feralis Erichs. San Pedro	Pennisetum purpureum		Jan. 3	
TELEBRICNIDAE				
Lobometopon guatemalensis Champ.	Amygdalus persica Canna indica Carica papaya Cestrum macrophyllum Citrus limonia Citrus nobilis de- liciosa Citrus sp. (tangelo)	Citrus sp. (toronjo) Coffea arabica Ligustrum japonicum Malus sylvestris Mangifera indica Persea americana Persea drymifolia Prunus pissardi		A tenebrionid ob- served feeding on pollen of peach, plum, and avocado, probably not a pest. Ob- served eating peach- rust fungus.

Lobometopon guatemalensis-- Cont'd		Collected on		Date	Notes
		Prunus salicina	Vernonia brachiata		
		Terminalia catappa	Vicia faba		
		Thunbergia erecta	Vigna sesquipedalis		
Schoenicus panamensis Champ.		Acaistus arborescens	Hibiscus rosa-sinensis	Jan. 5	A tenebrionid;
Grecia		Amygdalus persica	Nelus sylvestris	to	frequents
Guadalupe		Chaenopodium ambrosi-	Pennisetum purpureum	June 2.	flowers. Prob-
Paso Ancho		oides	Persca americana	Dec. 13-	ably not a
San Pedro		Citrus aurantium	Persca drymifolia	28	pest. Eats
		Citrus sinensis	Vigna sesquipedalis		pollen.
		Coffea arabica			
		Amygdalus persica	Citrus sinensis	Jan. 6-27	
Anypotactus exilis Boh.		Citrus nobilis delici-		Nov. 30	
San Pedro		osa			
		Chaenopodium ambrosi-	Vernonia brachiata	May 24	
Cleistolophus similis Chev.		oides		to	
San Pedro		Persca americana		June 5	
		Cucurbita pepo		Sept. 11	
Conotrachelus flavangulus					
Champ.					
San Pedro					
Conotrachelus perscae Barber		Persca americana		Jan. 5	Reared from larva
San Pedro				Aug. 13,	in avocado seed.
				20	Usually found be-
				Nov. 20	tween leaves
					webbed together
					by caterpillars.
Copturus constrictus Champ.		Persca americana		Dec. 19	Destroying avocado.
San Pedro					

EPYCHOPHORA

C o l l e c t e d o n			Date	Notes
Cosmopolites sordidus Germ. Waldeck	Musa sapientum		Feb. 13	Damaging bulbs. An important pest.
Eurhinus festivus Fab. San Pedro	Cestrum macrophyllum Vernonia brachiata		May 18 Nov. 19	
Geraeus lentiginosus Boh. El Cacao San Pedro	Chrysanthemum maximum Eugenia jambos Phaseolus vulgaris Vicia faba		Apr. 20 Nov. 7 Dec. 20, 30	
Lechriops sp. San Pedro	Erythrina rubrinervia Vernonia brachiata		May 19 June 30	
Nicentrus lineicollis Boh. San Pedro	Amaranthus spinosus Chrysanthemum maximum Fragaria chiloensis	Poinsettia pulcherrima	Oct. 5 to Dec. 30	
Pandelecius crubescens Champ. Guadalupe San Pedro	Persea americana Persea drynifolia		Apr. 24 to Nov. 28	Eats avocado leaves.
Rhodobaenus bicinctus Chevr. Ocotomogo	Verbesina turbacensis		June 28	
Rhodobaenus pantherinus Champ. Ocotomogo	Verbesina turbacensis		June 28	
Steirarrhinus nebulosus Champ. Paso Ancho San Pedro	Amygdalus persica Elaeagnus gracilis Boehmeria nivea Cestrum lanatum Citricoxylum caudatum Citrus limonia	Citrus nobilis Citrus sinensis Coffea arabica Doryalis neocarpa Triumfetta josefina Vernonia brachiata	May 7- Aug. 7	

D I P T E R A

Collected on		Date	Notes
Anastrepha serpentina Wied. San Pedro	Chrysophyllum sp.	Feb. 27 June 22 July 28	Larvae destroy fruit of star- apple. Adult reared July 28.
Anastrepha striata Schin. San Pedro	Mangifera indica Persca sp. Psidium guajava	Apr. 29 May 28 Aug. 20	Maggots in mango and guava fruit. Adult emerged May 28. Adults feed at avocado flowers.
Eusimulium callidum D. & S. San Pedro	Man	June 2 Oct. 8, 10	
Eusimulium metallicum Bell. Orosi San Pedro	Man	Through- out year.	A very trouble- some pest.
Eusimulium ochraceum Walk. San Pedro	Man	Feb. 26	
Eusimulium quadrivittatum Loew San Pedro	Man	June 4 to July 19. Dec. 15	
Myndus brevicornis Guer. San Pedro	Amygdalus persica Fortuella japonica Malus sylvestris Persca americana Solanum muricatum	June 18 Dec. 10- 28	Probably not a pest.

C o l l e c t e d o n			Date	Notes
Tetraeuresta obscuriventris Loew San Pedro	Erythrina rubrinervia.		May 18	Abundant on the leaves.
	Vernonia brachiata			
Toxotrypana curvicauda Gerst. Grecia	Carica papaya		Oct. 16	Destroys all papaya fruit in some regions, especially in San Pedro.
H E M I P T E R A				
Acanthocephala declivis var. guatemalena Dist. San Pedro	Calyptranthes costaricensis	Citrus nobilis deliciosa	Jan. 6 to Dec. 28	Very numerous on citrus fruits, causing the tips of branches to wilt.
	Casimiroa edulis	Citrus sinensis		
	Citrus aurantium	Citrus sp. (tangelo)		
	Citrus grandis	Citrus sp. (toronjo)		
	Citrus limonia	Poncirus trifoliata		
Acrosternum marginatum P. de B. Villa Quesada	Citrus sinensis		March 27	
Anasa andresii Guér. Peralta San Pedro	Cucurbita pepo		Feb. 15 Sept. 11 Oct. 1	
Anasa scorbutica Fab. San Dimas San Pedro	Cucurbita pepo		Aug. 31 Oct. 10	
Anisocelis gradadia Dist. San Pedro	Passiflora quadrangularis		Nov. 20	
Archimorus scutellaris Stahl Fago Archo San Pedro	Colea urticifolia axillaris Coix lachryma-jobi		May 26, 31 Sept. 13	Causes tips to wilt.

C o l l e c t e d o n			Date	Notes
Carpanus odiosus Stahl Coyolar San Lucas	Cymbopogon rufus Zea mays		July 7 Sept. 16	
Oulorocoris aberrans Dist. San Pedro	Persea americana		March 17	
Collaria oleosa Dist. El Cacao Lagunillas San Pedro Santa Ana Villa Quesada	Panicum barbinode Paspalum notatum Phaseolus vulgaris Sanchezia nobilis Zea mays		Feb. 14 March 28 Sept. 18 to Dec. 21	A mirid, abundant and harmful on grasses, causing leaves to dry.
Coreocoris sp. San Pedro	Chayota edulis Coffea arabica	Ipomoea tiliacea Tournefortia foetidis- sima	June 14 July 3 Sept. 25	
Corizus siamensis Fab. San Pedro	Malvaceae radiata		June 18	
Corythucha gossypii Fab. Alajuela San Jose San Pedro	Amygdalus persica Annona muricata		Apr. 1	Seriously damages soursoy.
Cosmopepla decorata Hahn San Pedro	Apium annui		May 26	A pentatomid.
Crontides rubrinervis Stahl San Pedro	Coffea arabica Gibiscus rosa-sinensis Helus sylvestris	Persea americana Vicia faba	Jan. 25- July 12	A mirid.
Cyrtopeltis notatus Dist. Paso Ancho San Pedro	Lycopersicon esculen- tum Nicotiana glauca		Feb. 4 to June 18. May 13- Dec. 23	A mirid pest of tomato and to- bacco.

C o l l e c t e d o n			Date	Notes
Dinocoris tripterus Fab. Peralta	Mangifera indica		Aug. 4	A pentatomid.
Dysdercus mimus Say Paso Ancho San Pedro	Annona cherimola Croton gossypifolium		May 31 June 15	A pyrrhocorid.
Dysdercus obliquus H. S. Cranadilla San Pedro	Althea rosea Canna indica Citrus sinensis	Coffea arabica Hibiscus rosa-sinensis	Sept. 11 to Dec. 10	Serious pest of hollyhock and other Malva- ceous ornamentals.
Edessa cornuta Burm. San Pedro	Ipomoea batatas Ipomoea tiliacea		Aug. 31 Oct. 5	A pentatomid.
Edessa junix Stahl El Cacao	Coffea arabica		Nov. 6	
Edessa galvini Dist. San Pedro	Croton gossypifolium		May 26	
Euschistus bifibulus P. de B. San Lucas	Zea mays		July 8	A pentatomid.
Gargaphia patricia Stahl Paso Ancho San Dimas San Isidro San Pedro	Acanthus arborescens Croton gossypifolium		Jan. 26 May 31 Aug. 31	A tingidid.
Halticus citri Ashm. El Cacao Paso Ancho San Pedro Santa Barbara	Capriola dactylon Cucurbita pepo Gomphrena globosa Jacobinia coccinea Lactuca sp.	Phaeocolus vulgaris Ranhamus sp. Solanum tuberosum Petragonia expansa Zantedeschia aethiopica	Feb. 1 to Apr. 5 Nov. 7- Dec. 27	A mirid, one of the most serious pests of the vegetable garden.

C o l l e c t e d o n			Date	Notes
Hypocionotus atratus Dist.	Amans sativus	Psidium friedrichsth-	Jan. 16	A coreid.
El Cacao	Coffea arabica	alianum	to	
Guadalupe	Conostegia macrantha	Saccharum officinarum	May 31	
Orosi	Cucurbita pepo	Vernonia brachiata	Sept. 13	
Paso Ancho	Dovyalis hebecarpa		Dec. 25	
San Pedro	Lectuca setiva			
Villa Quesada	Polypodium punctatum			
Jadera acola Dallas	Persea americana		March 23	A coreid.
San Pedro				
Jalysus mollitus Dist.	Polygonum zonale		Nov. 6, 7	A neidid.
El Cacao	Phaseolus vulgaris		Dec. 25	
Paso Ancho				
Leptobrysa chairiquensis	Persea americana		Nov. 20,	A tingidid.
Champ.			26	
San Pedro				
Leptoglossus stigma Hbst.	Bixa orellana		Feb. 6	A coreid.
San Pedro	Carica papaya		to	
	Morus rubra		Apr. 5	
			Nov. 30	
			Dec. 19	
Leptoglossus zonatus Dallas	Argemone persica	Cyphomandra betacea	Through-	Damages fruit
El Cacao	Bixa orellana	Ficus carica	out	of tomato
Grocia	Capsicum annuum	Lycopersicum esculen-	year	severely.
Ochomogo	Carica papaya	tum		
San Dimas	Citrus nobilis de-	Persea americana		
San Pedro	liciosa	Phaseolus vulgaris		
Santa Ana	Citrus sinensis	Prunus armeniaca		
	Cucurbita pepo	Vitis vinifera		

C o l l e c t e d o n			Date	Notes
Lygaeus bistrigularis Say San Pedro	Coffea arabica Cucurbita pepo		Aug. 17 May 17	A lygaeid.
Lygaeus circumlatus Stahl San Pedro	Annona cherimola Ligustrum japonicum Persen americana		May 18 Dec. 13	
Lygaeus reclinatus Say Santa Ana	Ipomoea tiliacea Gramineae		Nov. 22	
Megalotomus femoratus Dist. El Cacao	Phaseolus vulgaris		Nov. 7	A coreid.
Mormidea notulata H. & S. El Cacao	Phaseolus vulgaris		Nov. 7	A pentatomid.
Mezera viridula L. Ochomogo San Pedro	Amygdalus persica Brassica oleracea botrytis Brassica oleracea capitata Cucurbita pepo Impatiens balsamina	Lycopersicum esculentum Pyrus communis Raphanus sativus Solanum tuberosum Vigna sesquipedalis	June 18 to Dec. 20	A pentatomid.
Oncopeltus cingulifer Stahl Cuesta del Macho Muñe Orosi Paso Ancho Rio Segundo San Pedro Santa Ana Villa Quesada	Asclepias curassavica Citrus sinensis Vernonia brachiata		Mar. 25 to Nov. 22	A lygaeid, common on milkweed.

C o l l e c t e d o n			Date	Notes
Cinopeltus fasciatus Dallas	Asclepias curassavica		Sept. 13	A milweed pest.
Orosi	Coffea arabica		Oct. 8	
San Pedro			Nov. 22	
Santa Ana				
Pachycoris torridus Scop.	Acnistus arborescens	Vitis vinifera	Sept. 13	A scutellerid.
Orosi	Asparagus plumosus		to	
Paso Ancho	Malus sylvestris		Nov. 19	
San Pedro	Saccharum officinarum			
Paracalocoris annulatus Dist.	Chalcas exotica	Persea americana	Feb. 5	A mirid.
San Pedro	Coffea arabica	Persea drymifolia	July 2	
	Malus sylvestris	Vicia faba	Aug. 20	
			Dec. 20	
Patnia lunata Fab.	Cucurbita pepo		Dec. 30	A coreid.
San Pedro				
Poecillocapsus frumentarius	Vernonia brachiata		Sept. 7	A mirid, sometimes
Dist.			Dec. 17	predacious.
Guadalupe				
San Pedro				
Polymerus cuneatus Dist.	Crotalaria juncea		Nov. 19	A mirid.
San Pedro				
Proxys punctulatus Beauv.	Amygdalus persica	Sclerum scutiforthianum	July 7	A pentatomid.
Cajolar	Bromelia pinguin	Zea mays	to	
San Lucas	Persea americana		Nov. 22	
Santa Ana	Spondias mombin			
Pycnoderes incurvus Dist.	Cucurbita ficifolia		Feb. 15	A mirid.
Paralta	Cucurbita pepo		Aug. 31	
San Pedro	Ipomoea tiliacea		to	
			Dec. 20	

C o l l e c t e d o n			Date	Notes
Stenomacra marginella H. & S.	Amygdalus persica	Ipomoea tiliacea	Through-	A pyrrhocorid,
Granadilla	Annona cherimola	Lagerstroemia speciosa	out	serious pest
Guadalupe	Cestrum lanatum	Mangifera indica	year.	of avocado
Ochomogo	Citrus aurantium	Morus rubra		and coffee.
San Dimas	Citrus sinensis	Persea americana		
San Pedro	Coffea arabica	Vernonia brachiata		
	Ficus religiosa			
Thyanta perditor Fab.	Asparagus officinalis	Malacra radiata	Jan. 30-	A pentatomid.
Coyolar	Citrus aurantifolia	Persea americana	June 18	
San Pedro	Cupressus benthami	Solanum tuberosum	Sept. 17	
	Ficus religiosa	Tetragonia expansa	Dec. 17	
	Lycopersicum esculentum			

H O M O P T E R A

ALEYRODIDAE

Aleurocanthus woglumi Ashby	Citrus aurantifolia	Poncirus trifoliata	Through-	A parasite, Eret-
Alajuela	Citrus limonia		out	moccus serius
Coyolar	Citrus medica		year	Silv., is estab-
Greña	Citrus nobilis			lished at La
Guadalupe	Citrus sinensis			Uruca. It was
La Uruca	Coffea arabica			liberated at
Paso Ancho.	Eugenia jambos			Heredia in
Rio Segundo	Eugenia uniflora			August.
San Antonio	Persea americana			
San Pedro	Persea drymifolia			
Aleurothrixus howardi Quaint.	Citrus limonia		Feb. 4	
Paso Ancho	Citrus sinensis		to	
San Jose	Hamelia crotcha		Sept. 3	
San Pedro	Persea americana			

APHIDIIDAE

Collected on			Date	Notes
Aphis gossypii Glov. San Pedro	Hibiscus rosa-sinensis Persea sp.		Aug. 8 Dec. 26	
Aphis illinoisensis Shim. San Pedro	Vitis labrusca Vitis vinifera		Apr. 19- June 13	Caused considerable damage in April and May.
Aphis pomi DeG. Guadalupe San Jose San Pedro	Cydonia oblonga Eriobotrya japonica Malus sylvestris Pyrus communis		Through- out year	Especially harmful on first leaves of newly budded stock.
Aphis spiraeicola Patch San Pedro	Citrus nobilis delici- osa Fortunella japonica		Jan. 5- Aug. 13	
Eriosoma lanigera Hausm. Guadalupe	Malus sylvestris		July 14	
Phoradendron pseudobrassicaceae Davis San Pedro	Brassica japonica		Dec. 28	An important pest.
Toxoptera aurantiae Boyer Granadilla Guadalupe Ochomogo Paso Ancho Peralta San Isidro San Pedro	Chalcas exotica Citrus limonia Citrus nobilis de- liciosa Citrus sinensis Coffea arabica Ficus religiosa Fortunella japonica	Mamea americana	Through- out year	Causes damage, es- pecially on ten- der shoots.
CERCOPIDAE Cecidius siccifolius Walk. San Pedro	Amegilla persica Persea drymifolia		Jan. 6, 25	Forms masses of foam- like spittle that

Cephaeus siccifolius--Cont'd	Collected on	Date	Notes
Clastoptera funesta Stahl Cacajal San Pedro Villa Quesada	Gardenia florida Guazuma ulmifolia Polygonum punctatum Verbesina turbacensis	Dec. 18, 27 March 7, 27 May 24	hang over one foot from the branches, and which are blown around by the wind.
Epierania championi Fowl. San Pedro	Anacardium occidentale Calyptranthes costaricensis	May 21 Oct. 5 to Dec. 14	
Monocophora bicincta Say Coyolar El Cacao Ochomogo Paso Añcho San Pedro Santa Ana Villa Quesada	Anethum graveolens Capriola dactylon Musa paradisiaca Paspalum notatum Zea mays	March 26 June 26- Nov. 22	
Monocophora postica Walk. Alajuela Boca de Kopper Florescia Orosi Villa Quesada	Cela urticifolia Panicum barbinode Paspalum notatum Zea mays	March 26- 30 June 26 Aug. 10- Sept. 13	
CHEIMIDAE Frayseria ernstii Schwarz San Pedro	Cedrela montana mexi- cana Guarea glabra	Jan. to May Oct. 10	Very abundant and injurious.

CICADELLIDAE			Collected on		Date	Notes
<i>Agallia novella tropicalis</i> Van D. El Cacao Granadilla San Pedro			Amaranthus spp. Lantana camara Phaseolus vulgaris		Oct. 25- Dec. 24	
<i>Aligia modesta</i> O. & B. El Cacao Grecia San Pedro Santa Ana			Chayota edulis Gramineae Hibiscus rosa-sinensis Phaseolus vulgaris		Aug. 31 Nov. 7- Dec. 7	
<i>Aulacizes panamensis</i> Fowl. San Pedro			Citrus limonia Eugenia jambos		Jan. 6 June 27 Aug. 29 Sept. 13	
<i>Aulacizes tinubergi</i> Stål Orosi Ujarras			Acnistus arborescens Jatropha urens			
<i>Carinococcaphana sagittifera</i> Uh. Coyolar El Cacao Grecia San Antonio San Pedro Santa Ana			Aryzobolus persica Capriola dactylon Hibiscus rosa-sinensis Phaseolus vulgaris		Jan. 29 to March 6 Sept. 18 to Dec. 7	Very abundant on Bermuda grass.
<i>Carinica bella</i> Bruner & Met- calf San Pedro			Persica americana			
<i>Cicadella arcolata</i> Sign. Coyolar El Cacao San Pedro			Amarantus cruentus Annona cherimola Boehmeria nivea Calyptranthes costaricensis		Aug.- Nov. Jan. 12	
			Cucurbita pepo Fragaria chiloensis Gramineae Hamelia erecta Pelargonium zonale			

Cicadella areolata--Cont'd.	C o l l e c t e d o n		Date	Notes
	Persea drymifolia	Tripsacum laxum		
	Phaseolus vulgaris	Verbena litoralis		
	Saccharum officinarum	Vitis vinifera		
	Spondias mombin	Zea mays		
	Tetragonia expansa			
Cicadella coeruleovittata	Brassica spp.	Persea americana	Through-	
Sign.	Daucus carota	Phaseolus vulgaris	out	
El Cacao	Galinsoya hispida	Rumex crispus	year.	
Orosi	Ipomoea spp.	Tetragonia expansa		
San Dimas	Lycopersicum esculen-	Verbesina turbacensis		
San Pedro	tum	Vernonia brachiata		
Villa Quesada	Panicum barbinode			
	Pennisetum purpureum			
Cicadella flaviguttata Latr.	Solanum torvum		Feb. 14	
Peralta				
Cicadella lutea Sign.	Croton gossypifolium		Through-	
San Pedro	Vernonia brachiata		out	
			year:	
Cicadella miniaticeps Fowl.	Salvia arctifolia	Tropaeolum majus	Jan. 26-	
Orosi	Crotalaria juncea	Zea mays	March 26	
Peralta	Hibiscus rosa-sinensis		June 7-	
San Isidro	Rumex crispus		Aug. 21	
San Pedro	Sanchia nobilis			
Villa Quesada	Spondias cytherea			
Cicadella mollicella Fowl.	Paspalum notatum		Jan. 10-	
Alajuela			Aug. 22	
San Pedro			Nov. 22	
Santa Ana				

	C o l l e c t e d o n		Date Through- out year	Notes
Cicadella occatoria Say	Acanthus arborescens	Lantana camara		
Coyolar	Amygdalus persica	Malacra radiata		
Cuestá del Macho	Arracacia xanthorrhiza	Malus sylvestris		
El Cacao	Boenameria nivea	Oryza sativa		
Grecia	Brassica spp.	Panicum barbinode		
Paso Ancho	Camellia japonica	Pelargonium zonale		
Peralta	Carissa grandiflora	Persen americana		
San Lucas	Citrus limonia	Phaseolus vulgaris		
San Pedro	Coffea arabica	Psidium guajava		
Santa Ana	Coleus blumei	Rosa sp.		
Villa Quesada	Dahlia rosea	Sanchezia nobilis		
Waldeck	Dianthus barbatus	Sida rhombifolia		
	Elaphrium sinaruba	Solanum seforthianum		
	Ficus carica	Spondias mombin		
	Guazuma ulmifolia	Tetragonia expansa		
	Hamelia erecta	Verbesina turbacensis		
	Hibiscus esculentus	Vernonia brachiata		
	Impatiens balsamina	Zea mays		
	Ipomoea batatas			
Cicadella pardalina Fowl.	Amygdalus persica	Eugenia uniflora	Through- out year	
Granadilla	Anacardium occidentale	Ligustrum japonicum		
Guadalupe	Casuarina equisetifolia	Malus sylvestris		
Sabanilla	Citrus grandis	Morus rubra		
San Dimas	Citrus limonia	Parkinsonia aculeata		
San Pedro	Citrus nobilis deliciosa	Prunus armeniaca		
	Citrus sinensis	Raederia edulis		
	Coffea arabica	Spondias mombin		
Cicadella pulchella Guer.	Brassica oleracea capitata		May 28	
Coyolar	Crotalaria retusa	Hibiscus rosa-sinensis	July 2	
El Cacao	Fuchsia sp.	Jatropha urens	Sept. 13-	
Grecia		Lantana camara	18	

Cicadella pulchella---Cont'd

Gadalupe
Orosi
Paso Ancho
San Pedro
Ujaras

Cicadella reservata Fowl.

El Cacao
Paso Ancho
San Pedro
Waldeck

Cicadella sanguinolenta

Coque.
Paralta

Cicadella satelles Fowl.

San Pedro

Cicadella sexlineata Sign.

Gadalupe
San Isidro
San Pedro

Cicadella similis Walk.

Alajuela
Coyolar
El Cacao
San Antonio
San Pedro
Santa Ana
Villa Quesada

C o l l e c t e d o n

Phaseolus vulgaris
Sida rhombifolia
Vernonia brachiata

Acnistas arborescens
Eugenia uniflora
Impatiens balsamina
Jasminum sambac
Pelargonium zonale

Artocarpus communis

Citrus sinensis

Citrus sinensis
Duranta plumieri
Ficus religiosa
Ipomoea batatas
Lycopersicum esculen-
tum
Malacra radiata
Mentha sativa
Pelargonium zonale

Canna indica
Capriola dactylon
Colocasia esculenta
Daucus carota
Dianthus barbatus
Hamelia erecta
Mangifera indica

Tabernaemontana coro-
naria
Terminalia catappa
Vernonia brachiata

Feb. 14

Sept. 11

Through-
out
year

Jan. 26-
May 24
Aug. 10-
Dec. 20

Always abundant on
goraniums.

C o l l e c t e d o n			Date	Notes
Cicadella testudinaria Fowl.	Annona cherimola	Persea americana	Jan. 8-29	
Coyolar	Coffea arabica	Sida rhombifolia	Feb. 16	
Granadilla	Bauvardia humboldti	Spondias cytherea	Aug. 9 to	
Guadalupe	Elaphium sinaruba		Sept. 19	
Paso Ancho	Gramineae			
San Antonio	Lagerstroemia indica			
San Pedro	Merium oleander			
Cicadella variegata Fab.	Phaseolus vulgaris		Nov. 6-7	
El Cacao				
Cicadula maidis DeLong and Wolcott	Crotalaria juncea		July 13-	Abundant and harm-
San Pedro	Zea mays		Dec. 10	ful on young corn.
Daltocephalus flavicosta Stahl	Phaseolus vulgaris		Nov. 7	
El Cacao	Tetragonia expansa		Dec. 26	
San Pedro				
Diestostemma albipenne Fab.	Amygdalus persica	Tactsia fruticosa	Jan. 5-	Causes severe tip-
Granadilla	Citrus medica		May 18	wilt of coffee.
Guadalupe	Coffea arabica		Sept. 10-	
San Pedro	Pyrus communis		Oct. 25	
Diestostemma rugicolle Sign.	Asparagus plumosus	Coffea arabica	Through-	
Granadilla	Bixa orellana	Tactsia fruticosa	out	
Paso Ancho	Citrus limonia		year	
San Pedro	Citrus sinensis			
Euscelis obscurinervis Stahl	Gramineae		Jan. 26	
San Isidro				
Graphocephala anceps Fowl.	Persea americana		Sept. 17	
Coyolar	Spondias mombin			
San Pedro				

C o l l e c t e d o n			Date	Notes
Graphocephala coccinea Forst. San Lucas San Pedro Ujaras	Amygdalus persica Annona cherimola Calyptanthus costaricensis Citrus nobilis deliciosa Citrus sinensis Codiaeum variegatum Coffea arabica Ficus religiosa Hibiscus rosa-sinensis Jatropha urens Lippia berlandieri	Malus sylvestris Mangifera indica Persea americana Prunus armeniaca Prunus salicina Pyrus communis Rosa sp. Sambucus mexicanus Schinus molle Tetragonia expansa Vernonia brachiata Vicia faba	Through-out year	
Graphocephala urbana Stahl San Pedro	Impatiens balsamina Spondias mombin	Verbesina turbacensis Vernonia brachiata	Aug. 31 to Sept. 5 Dec. 20	
Graphocephala versuta Say Granadilla Paso Ancho San Dimas San Pedro	Camangium odoratum Citrus limonia Citrus sinensis Codiaeum variegatum Coffea arabica Eugenia uniflora	Ficus religiosa Mangifera indica Musa paradisiaca Fouteria caimito Spondias mombin	Through-out year	
Gypona scarlatina vinula Stahl Ochomogo San Pedro	Hamelia erecta Hymenaea courbaril Ipomoea sp.	Persea americana Solanum aculeatissimum	May 22-26 June 28 Oct. 5	
Gypona vulnerata Walk. Granadilla Paso Ancho San Dimas San Pedro	Amygdalus persica Annona cherimola Annona reticulata Calyptanthus costaricensis Cestrum macrophyllum	Chrysanthemum sp. Citrus aurantium Citrus limonia Citrus sinensis Coffea arabica	Through-out year	

Gypona vulnerata--Cont'd	C o l l e c t e d o n		Date	Notes
Kolla fasciata Walk. Alajuela Coyolar El Cacao Quebrada Azul San Antonio San Pedro Santa Ana Villa Quesada	Eugenia uniflora	Persea drymifolia	Through- out year	
	Hibiscus rosa-sinensis	Pouteria caimito		
	Hicoria pecan	Rumex crispus		
	Inga patero	Salvia splendens		
	Mangifera indica	Schinus molle		
	Panicum barbinode	Spondias mombin		
	Persea americana	Vitis spp.		
	Capriola dactylon			
	Paspalum notatum			
	Phaseolus vulgaris			
Kolla geometrica Sign. El Cacao San Pedro	Sida rhombifolia		Oct. 10 Nov. 7 Dec. 31	Most abundant in lower altitudes.
	Tetragonia expansa			
	Citrus sinensis			
	Lactuca sativa			
	Phaseolus vulgaris			
	Amgdalus persica	Guazuma ulmifolia		
	Anacardium occidentale	Jatropha urens		
	Anethum graveolens	Lagerstroemia indica		
	Calliandra grandiflora	Lantana camara		
	Citrus grandis	Malus sylvestris		
Oncometopia undata Fab. Coyolar Grecia Guadalupe Lagunillas Ochomogo Orosi Rio Segundo San Pedro Ujaras	Citrus nobilis de- liciosa	Phaseolus vulgaris	Jan. 5 to Oct. 16	
	Citrus sinensis	Prunus avium		
	Coffea arabica	Tamarindus indica		
	Erythrina rubrinervia	Vernonia brachiata		
	Eriobotrya japonica	Vitis vinifera		
	Guarea caoba			

COCCIDAE

Aspidiotus camelliae Sign.
San Pedro

Asterolecanium pustulans
Ckll.
Coyolar
El Cacao

Aulacaspis pentagona Targ.
Paso Ancho
San Pedro

Ceroplastes cirripediformis
Comst.
Paso Ancho
San Pedro

Ceroplastes floridensis
Comst.
Granadilla
Peralta
Quebrada Azul
San Pedro
Santa Ana

Chrysomphalus dictyospermi
Morg.
San Pedro

C o l l e c t e d o n		Date	Notes
Mangifera indica		Feb. 23	
Pyrus communis		July 3	
Merium oleander		Sept. 17 Nov. 7	
Amygdalus persica	Mangifera indica	Through-	Very abundant
Capsicum annuum	Morus rubra	out	and injurious.
Diospyros kaki	Prunus armeniaca	year	
Diospyros virginiana	Prunus pissardi		
Hibiscus mutabilis	Prunus salicina		
Hicoria pecan	Solanum muricatum		
Diospyros kaki		Jan. 23	
Diospyros virginiana		to	
Conolobus edulis		Feb. 2	
Persea drymifolia		Aug.	
		Oct.	
Amygdalus persica	Malus sylvestris	Through-	
Calyptanthus costaricensis	Mangifera indica	out	
Citrus aurantifolia	Pelargonium sp.	year	
Citrus sinensis	Persea americana		
Citrus sp. (toronjo)	Poncirus trifoliata		
Coffea arabica	Pouteria caimito		
Diospyros kaki	Schinus molle		
Diospyros virginiana	Solanum seaforthianum		
Eriobotrya japonica	Zea mays		
Citrus aurantium	Rosa sp.	April	Very harmful on roses
Citrus grandis		June 30	and young orange
Citrus sinensis			trees.

C o l l e c t e d o n			Date	Notes
Coccus acuminatus Sign.	Eriobotrya japonica		Feb. 14	
Cascajal	Jasminum grandiflorum		March 7	
Paso Ancho	Jasminum sambac		May 31	
Peralta	Mangifera indica		Oct. 7	
Coccus hesperidum L.	Citrus aurantifolia	Psidium guajava	Jan. 21-	
Guadalupe	Citrus sinensis	Solanum seaforthianum	Feb. 4	
Paso Ancho	Diospyros kaki		Oct. 2-	
San Pedro	Eugenia uniflora		Dec. 28	
Tacares	Fortunella japonica			
Coccus viridis Green	Citrus sinensis		Sept. 18	
Lagunillas				
Eriococcus araucariae Mask.	Araucaria brasiliana		June 22	
San Pedro				
Florinia florinae Targ.	Camellia japonica		Through-	
San Pedro			out	
			year	
Icerya montserratensis Riley	Citrus sinensis		May 18	
& Howard	Mangifera indica		Sept. 17	
Coyolar				
San Pedro				
Ischnaspis longirostris Sign.	Coffea arabica		Apr. 3	
San Pedro				
Lepidosaphes beckii Newm.	Chalcas exotica		Through-	
Guadalupe	Citrus aurantifolia		out	One of the most
Ochomogo	Citrus nobilis de-		year	harmful pests
Paso Ancho	liciosa			on orange
San Isidro	Citrus sinensis			jessamine and
San Lucas	Citrus sp. (toronjo)			on Citrus spp.
San Pedro				

C o l l e c t e d o n			Date	Notes
Orthezia insignis Dougl. Maranzo Paso Ancho San Jose San Pedro	Coleus blumei Salvia splendens		Feb. 14 July 5 Aug. 14 Nov. 13	
Pseudischnaspis bowreyi Okll. Ochomogo San Pedro	Annona cherimola Diospyros kaki Diospyros virginiana	Malus sylvestris Rosa sp.	Jan. 1- Dec. 27	Kills rose bushes.
Pseudococcus citri Risso Granadilla San Pedro	Casimiroa edulis Citrus aurantium Citrus limonia Citrus nobilis de- liciosa	Citrus nobilis Citrus sinensis Coffea arabica	Feb. 17 June 5-20 Aug. 7-27 Dec. 21- 28	Especially harmful on young trees and among coffee flowers and fruit.
Pseudococcus nipae Mask. San Jose San Pedro	Chamaedora bifurcata Persea americana Psidium guajava		April 25 June 4-30	
Pseudococcus virgatus Okll. Coyolar	Codiaeum variegatum Persea gratissima		Sept. 16	
Pulvinaria psidii Mask. San Pedro	Canarium odoratum Diospyros kaki Lucuma mammosa	Pouteria caimito Psidium guajava	Through- out year	
Saissetia hemisphaerica Targ. Alajuela Coyolar El Cacao Guadalupe Paso Ancho Peralta San Antonio	Annona muricata Asparagus officinalis Casimiroa edulis Cedrela montana mexi- cana Citrus aurantifolia Citrus aurantium Citrus grandis	Citrus limonia Citrus medica Citrus nobilis de- liciosa Citrus sinensis Cyceas revoluta Cythomandra betacea Coffea arabica	Through- out year	Abundant and very harmful on tender new growth.

Saissetia hemisphaerica--	C o l l e c t e d o n	Date	Notes
Cont'd.	Diospyros kaki	Poinsettia pulcher-	
San Dimas	Diospyros virginiana	rima	
San Isidro	Eugenia uniflora	Poncirus trifoliata	
San Pedro	Gardenia florida	Pouteria caimito	
Santa Barbara	Hamelia erecta	Psidium guajava	
	Jacobinia coccinea	Psidium molle	
	Mamea americana	Rheedia edulis	
	Mangifera indica	Schinus molle	
	Morus rubra	Solanum muricatum	
	Nephrolepis sp.	Solanum seaforthianum	
	Pereskia aculeata	Thunbergia erecta	
	Persea gratissima		
Saissetia nigra Nietn.	Annona cherimola	Nerium oleander	Jan. 12
San Pedro	Capsicum annuum	Vitis vinifera	Apr. 4-19
	Diospyros kaki		Nov. 13
Saissetia oleae Bern.	Blighia sapida	Jan. 10-	Jan. 10-
Paso Ancho	Cassia spectabilis	Feb. 26	Feb. 26
San Pedro	Diospyros kaki	June 5	June 5
	Fortunella japonica	Aug. 15-	Aug. 15-
	Hicoria pecan	20	20
	Pyrus communis	Dec. 25	Dec. 25
Selenaspidus articulatus	Jasminum sambac	Feb. 4	Feb. 4
Morg.		May 31	May 31
Paso Ancho		Dec. 25	Dec. 25
Trionymus sacchari Ckll.	Saccharum officinarum	July 8	July 8
El Cacao		Nov. 6-12	Nov. 6-12
San Lucas			A heavy infestation on roots of sugar-cane caused severe damage at El Cacao in November.
FULGORIDAE			
Acantholonia virescens Stuhl	Cymbopogon rufus	Persea americana	Aug. 17
Paso Ancho	Erythrina rubrinervia	Spondias mombin	Nov. 30
San Pedro			Dec. 25

C o l l e c t e d o n			Date	Notes
Bothriocera tinealis Burm. Muelle	Acnistus arborescens	Vernonia brachiata	March 28,	
Ochomogo	Calea urticifolia		29	
Orosi	Calliandra grandiflora		May 18-28	
San Pedro	Hedychium coronarium		Sept. 13	
Villa Quesada	Pennisetum purpureum		Nov. 13-	
	Spondias mombin		19	
Colgorma proxima Fowl.	Ficus carica		Aug. 31	
San Pedro				
Colpoptera sinuata Burm.	Cestrum lanatum	Gardenia florida	Through-	
Granadilla	Cestrum macrophyllum	Gomphrena globosa	out	
Paso Ancho	Coffea arabica	Hibiscus rosa-sinensis	year	
San Pedro	Dovyalis hebecarpa	Lippia berlandieri		
	Ficus religiosa	Spondias mombin		
	Galinsoga hebecarpa	Vernonia brachiata		
Copicerus irroratus Swartz	Gramineae		Nov. 22	
Santa Ana				
Cyrpoptus belfragi Stahl	Phaseolus vulgaris		Nov. 7	
El Cacao				
Flatoides humeralis Walk.	Coffea arabica		Sept. 10	
Granadilla			Oct. 25	
MEMBRACIDAE				
Aconophora laticornis Walk.	Croton gossypifolium		Jan. 15	
Guadalupe			May 3	
San Pedro				
Aconophora pallescens Stanl	Acacia cyanophylla	Anacardium rhinocarpus	Through-	Caused serious
Grecia	Amygdalus davidiana	Annona cherimola	out	damage to papaya
Ochomogo	Amygdalus persica	Bixa orellana	year	and avocado, pre-
Paso Ancho	Anacardium occidentale	Callistemon lanceola-		venting the former
Peralta		tum		from blooming.

Aconophora pallescens-- Cont'd. San Pedro	C o l l e c t e d o n	Date	Notes
	Calyptranthes costaricensis Carica papaya Cestrum aurantiacum Chrysophyllum cainito Citrus aurantium Citrus limonia Citrus nobilis deliciosa Citrus sinensis Coffea arabica Cydonia oblonga Dovyalis hebecarpa Ficus religiosa Phaseolus vulgaris		Hibiscus rosa-sinensis Hymenaea courbaril Lagerstroemia speciosa Malus sylvestris Mangifera indica Pennisetum purpureum Persea americana Persea drymifolia Phaseolus vulgaris Phoebe tonduzii Pouteria caimito Prunus cerasifera Spondias mombin
Acutalis fusconervosa Fairm. El Cacao	Phaseolus vulgaris	Nov. 7	
Aethalion quadratum Fowl. Guadalupe Orosi San Jose San Pedro	Persea americana Persea drymifolia Phoebe tonduzii	Feb. 16 to Oct. 5	Causes deformation of avocado branches.
Aethalion reticulatum L. San Pedro	Canarium odoratum Casuarina equisetifolia Erythrina rubrinervia Phoebe tonduzii Terminalia catappa	Jan. 3-19 Apr. 6 July 12 Nov. 20 Dec. 30	
Alchisme grossa Fairm. Guadalupe	Croton gossypifolium Cythomandra betacea Solanum lanceolatum sinuatum	Jan. 24 Feb. 16 June 5	

Antianthe expansa Germ. La Holanda Paso Ancho Peralta San Isidro San Pedro Santa Ana Sarchi Villa Quesada	C o l l e c t e d o n		Date Through- out year	Notes Especially harmful on pepper plants.
	Acnistus arborescens	Erythrina rubrinervia		
	Capsicum annuum	Nicotiana tabacum		
	Cestrum aurantiacum	Persea americana		
	Cestrum lanatum	Solanum aculeatissimum		
	Cestrum macrophyllum	Vernonia brachiata		
	Coffea arabica			
Boibonota inaequalis Fab. Coyolar El Cacao Granadilla Orosi Paso Ancho San Pedro	Acnistus arborescens	Ficus religiosa	Through- out year	
	Calea urticifolia	Fortunella japonica		
	Calyptanthus costari- censis	Hicoria pecan		
	Camellia japonica	Hymenaea courbaril		
	Canarium odoratum	Malus sylvestris		
	Casuarina equisetifo- lia	Mamea americana		
	Cinnamomum camphora	Mangifera indica		
	Citrus limonia	Morus rubra		
	Citrus sinensis	Persea americana		
	Coffea arabica	Persea drymifolia		
	Diospyros kaki	Pouteria cainito		
	Dovyalis hebecarpa	Prunus armeniaca		
	Eugenia jambos	Prunus salicina		
	Eugenia uniflora	Rosa sp.		
Bolbonota insignis Fowl. Coyolar El Cacao San Antonio San Pedro	Calyptanthus costari- censis	Guarea caoba	Jan. 3- Nov. 7	
	Casuarina equiseti- folia	Mangifera indica		
	Coffea arabica	Morus rubra		
	Diphysa robinoides	Persea americana		
	Ficus religiosa	Phaseolus vulgaris		
	Grevillea robusta	Saccharum officinarum		

C o l l e c t e d o n			Date	Notes
Campylocentrus hamifer Fairm. San Pedro	Chayota edulis Spondias mombin		Aug. 31 Dec. 13	
Cyphonia clavata Fab. Cuesta del Macho Sarchi Villa Quesada Waldeck	Cestrum lanatum Eupatorium odoratum Vernonia brachiata		Feb. 10 March 25- 27 Aug. 14	
Enchenopa lanceolata Stoll Orosi Paso Ancho San Dimas San Pedro	Casuarina equiseti- folia Croton gossypifolium Coffea arabica Cydonia oblonga	Cytisus fragrans Diphysa robinoides Erythrina rubrinervia Hicoria pegan Parkinsonia aculeata	Jan. 10- Nov. 19	
Erythra sinuata Fab. Cuesta del Macho El Cacao Orosi Paso Ancho San Jose San Pedro Villa Quesada	Calce utricifolia Coffea arabica Coix lachrymar-jobi Crotalaria retusa Dahlia rosea Jacobinia coccinea Persea americana Persea drymifolia	Phaseolus vulgaris Vernonia brachiata	Feb. 15 May 28 Sept. 13- Dec. 25	
Erechtia sallaci Fowl. San Pedro	Anacardium occidentale Malus sylvestris Persea drymifolia		June 12- Dec. 26	Injurious to avocado; causes fruit to drop.
Heteronotus nodosus Germ. El Cacao Granadilla Guadalupe San Antonio	Inga paterno		July 2 Oct. 25 Nov. 7	

C o l l e c t e d o n			Date	Notes
Horioia picta Coque. Waldeck	Theobroma cacao		Feb. 13	
Hypsoprora coronata Fab. Orosi	Calea urticifolia		Sept. 13	
Membracis mexicana Guer. Granadilla Guadalupe Paso Ancho San Dimas San Pedro Waldeck	Acnistus arborescens Amygdalus persica Anacardium occidentale Anacardium rhinocarpus Annona cherimola Annona muricata Callistemon lanceo- latum Calyptranthes costari- censis Camellia japonica Canarium odoratum Casuarina equiseti- folia Citrus limonia Citrus sinensis Citrus sp. (toronjo) Coffea arabica Cydonia oblonga Diospyros kaki Diospyros virginiana Dovyalis hebecarpa	Erythrina rubrinervia Eugenia uniflora Hamelia erecta Hibiscus rosa-sinensis Hicoria pecan Hymenaea courbaril Jacobinia coccinea Lagerstroemia speciosa Malus sylvestris Mammea americana Mangifera indica Morus rubra Persea americana Phoebe tonduzii Pouteria caimito Prunus salicina Psidium guajava Pyrus communis Solanum seaforthianum Terminalia catappa	Through- out year	Seriously damages many plants.
Micrutalis albiivitta Fowl. San Pedro	Croton gossypifolium		Dec. 22	
Polyglypta dispar Fowl. Ochomogo	Verbesina turbacensis		June 28	

Collected on		Date	Notes
Polyalthodes cucullatus Fowl. San Pedro	Dipysa robinoides	Dec. 13	
Poppa corpicornis Fowl. Cuesta del Macho	Eupatorium odoratum	March. 25	
Pterygia bituberculata Fowl. San Pedro	Inga edulis	June 28	
Spondyropsis ballista Germ. Paso Ancho San Pedro Villa Quesada	Erythrina rubrinervia Indigofera suffructi- cosa Morus rubra Musa paradisiaca	March 26 June Aug. 30 December	
Stictoccephala festina Say Coyolar San Isidro San Pedro	Codiaeum variegatum Crotalaria juncea Hibiscus rosa-sinensis Persea americana	Jan. 26- Feb. 26 Sept. 16 Dec. 27	
Umbonia crassicornis Am. & Serv. Guadalupe Paso Ancho San Lucas San Pedro	Calliandra grandiflora Enterolobium cyclocar- pum Pyrus communis	May 26- July 7	Damages plants by egg scars.
Vanduzea segmentata Fowl. Orosi Paso Ancho	Acnistus arborescens Byrsonima crassifolia	Sept. 13 Oct. 7	

HYMENOPTERA

Atta sexdens L.
El Cacao

Many species of plants

Sept. 13
to
Nov. 22One of the serious
pests of Costa Ri

C o l l e c t e d o n			Date	Notes
Atta sexdens--Cont'd. Grecia Orosi Santa Ana	Capsicum annuum Chalcas exotica Citrus aurantium Citrus limonia Citrus medica Citrus nobilis deliciosa Citrus sinensis Coffea arabica Diospyros kaki Dovyalis hebecarpa Ficus religiosa	Hibiscus rosa-sinensis Hymenaea courbaril Impatiens balsamina Malus sylvestris Persea americana Poinsettia pulcherrima Psidium guajava Pyrus communis Schinus molle Sterculia diversifolia Zea mays	Through-out year	Seriously damages trees by cutting twigs, particular avocado and citrus also a household pest.
Trigona amalthaea Oliv. Grecia	Caesalpinia pulcherrima		Dec. 6	In flowers.
Trigona cupira Smith San Pedro	Asparagus officinalis Dombeya wallichi Rosa sp.	Zante deschia aethiopica	March 13 June	In flowers; best pollinator of asparagus.
Trigona ruficrus corvina Cr. Escasu	Citrus sinensis		Jan. 14	Damages orange by eating flowers and tender foliage.

L E P I D O P T E R A

Agraulis juno Cr. Paso Ancho San Pedro	Passiflora edulis Passiflora ligularis		Apr. 15- May 31	Larvae damage granadilla.
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C o l l e c t e d o n			Date	Notes
Agraulis poeyi Eutl. San Pedro	Passiflora ligularis		Apr. 3 to March 14	Larvae damage gran- adilla.
Anteos clorinde Godt. Paso Ancuo	Musa sapientum		July 29	
Automeris Loucardi Druce Paso Ancho San Pedro	Erythrina rubrinervia Inga laurina Malus sylvestris		Jan. 15 July 6 Nov. 21 to Dec. 27	Defoliates apple in late December.
Automeris rubrescens Walk. Guadalupe San Pedro	Cinnamomum camphora Coffea arabica Nephrolepis sp.		Jan. 31 May 29	
Azochis gripusalis Walk. San Pedro	Ficus carica		Jan. 24 to May 2	Seriously injures fig by boring branches.
Ertoldia specularis H. & S. San Pedro	Citrus nobilis de- liciosa Citrus sinensis		Jan. 11 June 7	
Dicentra violacens H. & S. San Pedro	Diospyros virginiana		June 18	Reared on this plant
Dircenna klugii Geyer San Pedro	Solanum lanceolatum sinuatum		Jan. 29	Reared on this plant
Eantis pallida Feld. Ochomogo San Isidro San Pedro	Casimiroa edulis Citrus aurantifolia Citrus aurantium	Citrus limonia Citrus sinensis	Jan. 10 to Dec. 28	Seriously injures citrus.
Eupantheria eridane Hbn. San Pedro	Promus salicina		Nov. 20	Taken ovipositing.

C o l l e c t e d o n		Date	Notes
Euglyptis melancholica Butl. San Pedro	Persea americana	Sept. 20	
Halisidota underwoodi Roth. San Pedro	Cydonia oblonga Citrus sinensis Ficus religiosa	Jan. 5- Aug. 21	
Hemerocampa costaricensis Schaus San Pedro	Mangifera indica Persea americana	Feb. 6 Feb. 16	
Hermionodes porrecta Walk. Gundalupe	Alnus acuminata	Jan. 19 to Apr. 15	Larvae bore in jaul.
Hylesia alinda Druce Gundalupe Paso Ancho San Pedro	Citrus aurantium Lagerstroemia indica Malus sylvestris Pelargonium sp.	Jan. 1- July 13 Nov. 28	Larvae on apple and sour orange.
Hyphypena colpodes Wlsm. Gundalupe San Pedro	Persea americana Persea drymifolia	Jan. 5 to Dec. 18	Seriously damaging avocado.
Hypsipyla grandella Zell. Coyolar San Pedro	Cedrela glaziovii pub- erula Cedrela montana mexi- cana Guarea caoba	July 2 to Oct. 10	Damages caoba and cedro; a serious pest.
Jocara claudalis Mosch. Alajuela Coyolar El Cacao Gundalupe Paso Ancho San Isidro San Pedro	Persea americana Persea drymifolia	Through- out year	A serious pest of avocado.

Jocara subcurvalis Schaus San Pedro	Persea americana Persea drymifolia	Jan. 5 to Nov. 20	A pest of avocado.
Laphygma frugiperda S. & A. San Pedro	Zea mays	Aug. 7	
Leucoptera coffeella Guer. & Proutt. El Cacao Granadilla Guadalupe San Antonio San Pedro	Coffea arabica	Jan. 24 to May 14. Oct. 25- Dec. 10	A pest of coffee.
Machimia erythema Wlsm. San Pedro	Persea americana	Feb. 18	Adult emerged from larva on avocado.
Megalopyge costaricensis Sch. Guadalupe San Pedro	Citrus limonia Citrus sinensis Coffea arabica Malus sylvestris	Jan. 10 to June 1	Larva called "gusano de pollo."
Mesocordyla concordialis Hbn. Coyolar San Pedro Santa Ana	Couratlea rosea	July 12 to Nov. 22	Damaging this tree.
Epilio anchistomoides idaeus Fab. Alajuela Coyolar San Jose San Pedro	Casimiroa edulis Citrus limonia Citrus nobilis de- liciosa Citrus sinensis	Feb. 23 June 5 to Nov. 22	An "orange dog," a pest of importance on citrus.

C o l l e c t e d o n			Date	Notes
Papilio polyxenes stabillis R. & J. Ochomogo	Anethum graveolens		June 28	
Papilio thoas autocles Roth. San Jose San Pedro	Citrus sinensis Ruta graveolens		June 18 Nov. 28	Reared.
Phobetron hipparchia Cr. San Pedro	Citrus sinensis Coffea arabica Hymenaea courbaril Lagerstroemia speciosa	Malus sylvestris Persea americana Vernonia brachiata Vitis vinifera	Apr. 30 July 18 to Nov. 28	Defoliates small trees.
Plutella maculipennis Curt. San Pedro	Brassica oleracea capitata		Apr. 5	Very abundant on cabbage.
Sibine apicalis Dyar Guadalupe San Pedro	Citrus sinensis Taetsia fruticosa		Feb. 5	Larvae collected on dracena Nov. 27. Adult emerged Feb. 5.
Stenomona anonella Sepp. Coyolar San Dimas San Pedro	Annona cherimola Annona muricata Annona squamosa		July 24 to Sept. 17	Destroys fruit.
Stenomona sororia Zell. Paso Ancho San Pedro	Persea americana Persea drymifolia Phoebe tonduzii		Jan. 5 to Dec. 25	A serious pest of avocado, particularly to young grafts.
Tineola uterella Wlsm. San Pedro	Household goods		Through- out year	A clothes moth.

ORTHOPTERA

Collected on		Date	Notes
Coccothrus rarus Rehn San Pedro	Amygdalus persica Annona squamosa Citrus grandis Citrus nobilis de- liciosa Citrus sinensis Coffea arabica Malus sylvestris	Passiflora ligularis Pelargonium zonale Saccharum officinarum Taetsia fructicosa Trichopilia suavis Zantedeschia aetheo- pica Zea mays	Eats leaves and tender stems of a wide variety of plants; also damages plants by ovipositing slits; also a pantry pest.
Conocephalus cinereus Thunb. El Cacao San Pedro	Panicum barbinode Phaseolus vulgaris Rosa sp.	Tetragonia expansa Tripsacum laxum	A tettigoniid; es- pecially harmful on grasses.
Ellipes minuta Scudd. El Cacao San Pedro	Capriola dactylon Capsicum annuum Fragaria chiloensis	Persea americana Phaseolus vulgaris Tetragonia expansa	
Insara intermedia Bruner Coyolar Guadalupe San Pedro	Acalypha sp. Casuarina equiseti- folia Citrus aurantium Hibiscus rosa-sinensis	Malus sylvestris Musa paradisiaca Rumex crispus	Harmful.
Neoxabea bipunctata Deg. San Pedro	Amygdalus persica Persea americana	Persea drymifolia	A gryllid.
Panchlora cubensis Sauss. San Pedro	Coffea arabica Zea mays	Oct. 1 to Nov. 13	A green roach.
Paratettix mexicanus abortus Hancock San Pedro	Galinoga hispida	Aug. 30	Acridid.

C o l l e c t e d o n			Date	Notes
Stored products				
Periplaneta australasiae Fab. San Pedro			Dec. June	Very troublesome household pest.
Pycnopalpa bicordata Serv. San Pedro	Citrus sinensis		Oct. 22	
Rhipipteryx biolleyi Sauss. San Pedro	Annona cherimola Annona reticulata Ipomoea batatas	Malacra radiata Tripsacum laxum	May 2 to Oct. 5	
Schistocerca impleta Walk. Ochomogo Paso Ancho San Pedro	Amygdalus persica Beta cicla. Boehmeria nivea Citrus aurantium Citrus limonia Citrus nobilis deliciosa Citrus sinensis Citrus sp. (tangelo) Coffea arabica Cupressus benthami	Dahlia rosea Ficus carica Fortunella japonica Fragaria chiloensis Hibiscus rosa-sinensis Malus sylvestris Persea drymifolia Tetragonia expansa Vigna sesquipedalis	Feb. 17 to July 12 Oct. 5 to Dec. 27	Nymphs and adults very harmful to a wide variety of plants.
Taeniopoda varipennis Rehn San Pedro	Asparagus plumosus Coleus blumei Corcopsis lanceolata Cucurbita pepo Hemerocallis sp.	Hibiscus rosa-sinensis Rosa sp. Sambucus mexicana Spiraea prunifolia	Sept. 5	Acridid; very abundant in cemeteries, where it destroys flowers.
C O R R O D E N T I A				
Nescus flavatus Navas San Isidro San Pedro	Dovyalis hebecarpa Morus rubra Punica granatum		Jan. 26 Apr. 18 Aug. 6	

THYSANOPTERA

Collected on		Date	Notes
Gynaikothrips uzeli Zimm. El Cacao	Ficus nitida	Nov. 12	Causes new leaves to curl; effect disappearing later.
Liothrips zeteki Hood Paso Ancho San Pedro	Persea americana Persea drymifolia	Jan. 9 to March 27 Aug. 20 to Dec. 27	A serious pest of avocado, particularly to newly budded stock.
Selenothrips rubrocinctus Giard Peralta	Mangifera indica	Feb. 14	

DERMAPTERA

Doru lineare Esch. Santa Ana	Oryza sativa Zea mays	Nov. 22	
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